

## NOTES ON NESTING RUBY-THROATED HUMMINGBIRDS

BY A. L. PICKENS

That one does not deliberately go into the woods to find hummingbird nests, for hummingbird nests are gifts of the gods, is the poetical idea of a certain nature writer. Nevertheless, in the southeastern states, I found a certain amount of eliminative reasoning and planning of decided value in locating the lichen-covered nest of the ruby-throat. First, the direction from the feeding grounds is apparently indicated by the flight of the bird after its feeding visit is over. Second, where it grows abundantly, the post oak (*Quercus minor*) is the favorite nesting tree of these birds—its lichen-covered branches forming a suitable setting for the similarly covered receptacle for the eggs. Third, the droning sound made by the wings of the mother as she hovers about the nest is a good guide for the ear, though at times the same sound may merely lead one to a sap-flow from the wounded bark of some forest tree.

Of nine nests observed in the vicinity of the old Richmond Church site, near Equality, S. C., six were in post oaks; two, evidently by the same individual in succeeding nesting seasons, were in one pine tree at a high elevation, and one in a small plum tree in a locality that, to the imaginative, truly seemed to stamp it as a divine gift. I had returned to the old farm on which I was reared, and was to spend a long summer vacation. It was one of those old southern farms whose original owner had helped expel the Cherokees in colonial days, leaving the soil and cherished traditions to be passed on in unbroken line to the modern owners. I had not had time to get fully settled, when from the familiar old dining table I glanced through the window, and found a female hummingbird at work constructing a nest on a limb of a small sugar plum that grew up before the window of the room above, which I was to occupy. I must confess it was a temptation to rhapsody and poetry rather than cold scientific observation. It was rather easy to personify the Old Mother, who came so near dropping a gift like that in one's lap. However, I determined to make use of this opportunity to observe at close range the nesting life of the ruby-throat in a scientific way. Spider-webs, bits of lichen, pappus, and tomentum from the lower side of white oak leaves appear to most of us rather untidy materials when seen in the crude state, but it was of such material that the midget below my window wove her nest. Sometimes she brought a lichen bit for the outside. If she fitted such to the base of the nest, she leaned far over, while seated in the cup, and placed it in position with the tip of her

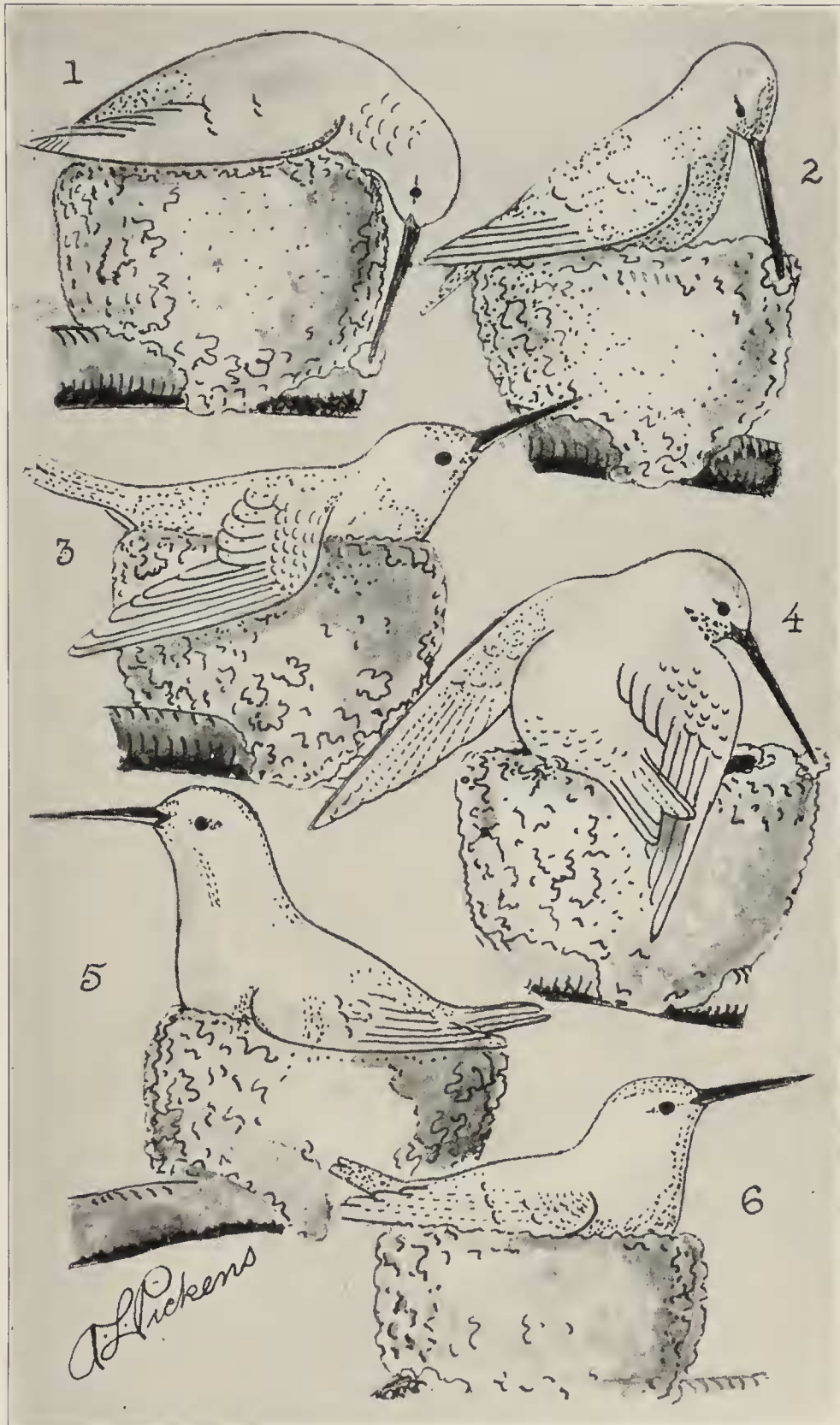


FIG. 14. Sketches of a female Ruby-throated Hummingbird in various stages of nest building and incubation.

long beak; if on the edge above she drew up her bill along the throat and attached it in the same manner. Again she brought downy lining for the inside and twisting round and about packed and felted it into place by lying partially on one side and working it into place with the feet, while one wing drooped over the edge of the nest. Then with the body twisted into an odd little knot, and the wings drooping over the edge as when working on the interior lining, she busied herself with the outside, also placing yet another bit of lichen in position. Before the final touches the first egg was deposited, incubation beginning at once. Keenly alert to surroundings, at times the mother was seen with the head held high as in the two lower figures of Figure 14. Assured of the safety of her immediate neighborhood, she would drop comfortably down into the nest as seen in Figure 15. This long vigil of incubation she varied with additional touches of lichens on the outside of the nest, the contents of the interior precluding any further work on the lining. I was surprised at the length of time required for hatching, for my information from various authors led me to expect these small eggs to be fully incubated in something like ten days. In this case I had a long wait of two weeks. The first arrival was very unlike a hummingbird, being very black, wrinkled, and naked, with a bill about one-eighth of an inch in length and almost as wide at the base. The mother leaving the nest with one egg unhatched immediately began the feeding. She went and came often, returning at times between feeding trips, not to feed the young, but merely to hover on the nest, the outside of which a few days before had received so much of her care, even to apparent plumbings of the side with her beak, which in reality may have been the plucking off of loose spider-web ends. Even the eggs, as we noted, could not stop the careful addition of a few extra lichens to the outside, but with no male assistance to feed the young, we may well imagine the female with sufficient responsibility to provide food for herself and offspring. A hummer's feet, as is the case with the pewee, are small, and little used except for perching, and the mother did not step from the edge into the bowl of the nest as larger birds might do, but lifted herself and flew this short distance! That is she would rise lightly on her wings and drop gently in to hover her charge. When she came with food she roused her baby from its slumber with a weak, gentle, little call of "*chiff-chiff, chiff-chiff, chiffit*"!

The next morning the other egg was still unhatched, and I rashly presumed it had decayed, and set about securing it for a collection I had made entirely from decayed and deserted eggs. I improvised a



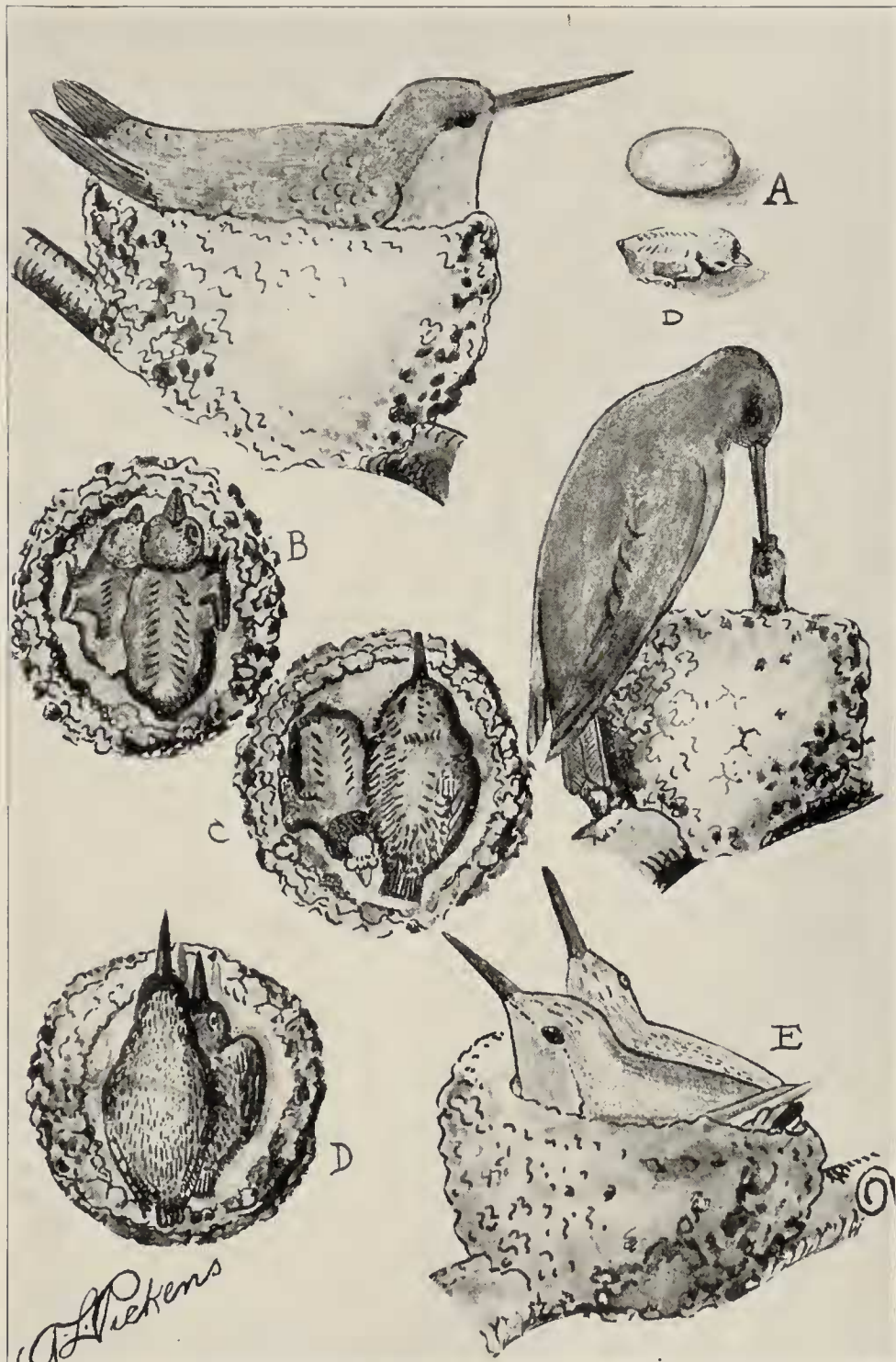


FIG. 15. Sketches showing adult female Ruby-throat sitting on the nest and in the act of feeding the young. Other figures show the young in various stages from hatching to the time of leaving the nest.

ladder and climbed up to the limb that held the nest, and reached in to get the egg. To appreciate the delicacy of this task one must recall how fragile an egg like that of a titmouse or a small sparrow is, and remember that a hummingbird's egg is smaller still. Forceps might crush it, and to take it between thumb and fore-finger was to introduce both in a space barely large enough for the thumb. The result was that I dropped the egg, and it bounced earthward by stages, striking my improvised ladder once or twice on the way down. When I picked it up it was fractured, as I recall now, quite all around the smaller diameter, and blood was oozing through the suture. Rarely have I experienced keener chagrin. That egg was no longer a mere laboratory or field specimen. Despite my memories of the kind little city boy who, visiting grandmother's, helped a chick out of the egg with disastrous results, I resolved to save the young bird in that egg. From the pantry I secured a hen egg, broke it and took some of the membrane that lines the inside of the shell, and this I wrapped around the broken exterior of the smaller egg. From time to time I moistened the membrane to keep it from growing dry and hard, keeping it warm by blowing on it with my breath, or else by holding it cupped in my palms or against my body. I was at last rewarded by vigorous movement on the part of the bird. It gave several kicks with the legs, pushed the surrounding membrane with the feet, and opened the beak as if for air. Very carefully I punctured a hole in the improvised covering quite near the bill. The movements became more insistent and I began to unwrap the outer membrane. When I had partly finished, the bird raised its head and exposed the throat to view. Through the delicate skin I caught sight of a distinct and emphatic up and down motion which was evidently the tongue and larynx adapting themselves to their new position. A few grains of sand, glued with albumen, stuck to the skin of the nestling as a result of its dangerous drop to the earth. These I carefully removed, and wetting the point of a needle I freed the midgut wing that had become stuck to the side of the body by the same medium. At last it wriggled out of the remains of the shell, and lay stretched on my palm, its body about as big as a pea, its head about half that large, its feet impressing the observer by their exceeding smallness and the delicacy of the plainly visible claws. I carried it again to the nest, where the mother came and hovered it, and I soon had the satisfaction of seeing it raise its head and open its mouth to receive the long beak with which the mother regurgitated food from her crop to its own. I sketched the mother feeding

one of the pair, and the young I sketched at intervals of about three days until the green feathers began to show just a little in the wings. After about one week, one of the pair found a voice and uttered from time to time a soft little cheeping, "*Tweet*". Then they came to answer their mother with a "*tsip, tsip*", changed later to a "*psweep. psweep. psweep*", something like the cry with which a young squab greets its parents. When young of this species leave the nest this gives place to a shrill, distinct, "*tsweep*", repeated slowly and deliberately and audible for some distance, especially to the highly attentive mother, who for some time continues her feeding operations.

The skill of the young when they take to wing is one of the marvels of ornithology. How they learn so quickly to judge the nearness of a perch, and to sustain themselves without the usual drops to the ground that we find in larger species is marvelous, but once they are on the wing, he is foolish who gives them chase. I shall not soon forget dragging a heavy ladder into the wood, propping it against the limbless trunk of a tulip poplar and climbing far up into the crown following a young hummer's notes and half hoping to find a nest. It buzzed away as easily as a bumble-bee, and alighted in a nearby tree with the poise of an experienced flyer, although it was out of the nest perhaps a matter of only a few hours.

One of the nests mentioned above was quite finished by the fourteenth day of May. Nearly two months later another nest nearby held a pair about ready to fly, while the one beneath my window was almost completed by June 10. Thus, nesting activities at this place would appear to be chiefly between the first of May and the middle of July with additional time for attending the young on the wing. Curiously enough I can record but one nest of this species built in a conspicuously flowering tree. A large Albizzia, or Silky Tree, often planted in the South for shade and ornament, grew in the yard of a boyhood friend who lived about twelve miles away from my father's home in upper South Carolina. One summer this tree was selected as a nesting site by a female ruby-throat. I have found them nesting on limbs very near an immense bower of honey-suckles, but never within a blooming limb or spray of foliage of any kind, and when they do it appears to be a departure from the general habit that seeks for concealment for the nest.

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